

RESULTS OF DETECTION SURVEYS FOR FOREST  
INSECT AND DISEASE ACTIVITY ON THE  
GEORGE WASHINGTON NATIONAL FOREST

By

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INTRODUCTION

An aerial survey and subsequent ground checks to detect forest insect and disease activity was conducted on the George Washington National Forest, Virginia and West Virginia during the period of June 18-23, 25, and 29, 1979.

The aerial survey was planned to coincide with periods of maximum gypsy moth defoliation.

In May, 4700 acres along the Virginia and West Virginia border were aerially treated with two applications of Dimilin for gypsy moth control. The spray area was approximately 50 miles north of the George Washington National Forest.

The aerial survey crew consisted of: Cal Morris, Virginia Division of Forestry; Dave Collins, James River Ranger District; John Roberts, Warm Springs Ranger District; Greg Oakleaf, Dry River Ranger District; Kathy Swisher, Pedlar Ranger District; and Charles Dull, FIDM.

A survey for gypsy moth detection in campgrounds on the George Washington National Forest was incorporated into the ground checks following the aerial survey.

METHODS

Aerial survey coverage of 50% over approximately 1,795,000 acres were conducted in a Cessna 182 flying at 1000 feet above the terrain.

In May 1979, FIDM personnel placed 20 burlap bands (Fig. 1) at each of five campgrounds. These bands serve as resting places for gypsy moth larvae and pupation sites which could easily be monitored. Bands were placed at:

Wolf Gap  
Trout Pond  
Elizabeth Furnace.

Camp Roosevelt  
Hazard Mill

Each band was placed about ten feet above the ground where they would not be disturbed by the public. Each site was checked during the weeks of June 18-21, July 3-5, and July 31-August 2, 1979. All bands were removed following the third examination.

All larvae and pupae found under the bands were collected and placed in rearing containers to identify the parasites attacking native forest insects as well as the gypsy moth, if present. One objective of this survey was to determine if introduced gypsy moth parasites utilize native forest insects as alternate hosts within the National Forest.

### RESULTS

Light defoliation of hardwoods was observed on approximately 19,000 acres within the National Forest boundary. The major defoliation or insects causing damage to hardwoods included:

- (1) fall cankerworm, *Alsophila pometeria* (Harr);
- (2) periodical cicada, *Megicicada septendecim* (L.); and
- (3) locust leaf miner, *Xenochalepus dorsalis* (Thunb).

The most extensive areas of defoliation was caused by the fall cankerworm (see attached map). Scattered stands of black locust were severely defoliated throughout the survey area (Fig. 2).

An outbreak of the periodic cicada (Fig. 3) was present in localized areas throughout the National Forest. Wilted branches (Fig. 4) and stem breakage (Fig. 5) at damaged points was observed from the air (Fig. 6) and along roadsides.

Defoliation caused by the gypsy moth was not detected. Gypsy moth larvae and pupae were not found under the burlap bands. Several species of parasites have been produced from a variety of defoliators found under the bands and will be identified this winter.

Pine defoliation caused by the Virginia pine sawfly, *Neodiprion pratti* pratti (Dyar), was causing moderate to severe defoliation (Fig. 7) in stands of Virginia and pitch pine on approximately 6000 acres throughout the National Forest. Although feeding larvae had completed their development, pupae (cocoons) (Fig. 8) were numerous in the litter and soil under 50-75% defoliated pine stands.

Needle cast of pine was also observed during ground checks, causing partial, but not severe defoliation.

Red and fading pines suspected to contain southern pine beetles were not observed.

### DISCUSSION AND CONCLUSIONS

Growth loss due to fall cankerworm defoliation may occur, although tree mortality is not expected. Tree mortality may become evident if several consecutive years of complete defoliation occurs.

Outbreaks of the periodic cicada are cyclic in nature and appear to be localized throughout the National Forest. The large number of adults and the loud noise they produce will subside in July.

Black locust mortality was evident in some stands sustaining heavy defoliation.

In general, a variety of insects were detected causing tree damage, none of which could be considered a serious threat to the timber and recreational resources of the George Washington National Forest at this time.

The gypsy moth continues to threaten the hardwood forest of the George Washington National Forest. As of July, the Virginia Department of Agriculture and the Virginia Division of Forestry report no finds of gypsy moth larvae and pupae from tree bands in or adjacent to the spray area. However, one larvae was found in a band in West Virginia adjacent to the spray area.

Aerial and ground surveys for the detection of gypsy moth on the George Washington National Forest should continue next year.

National Forest personnel should continue field surveillance for the detection of forest insect and disease activity.

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For any additional information, contact

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Figure 1. Burlap bands placed on trees in campgrounds were checked to detect gypsy moth.



Figure 2. Black locust foliage defoliated by the locust leaf miner.





Figure 3. Periodic cicada also known as the 17-year locusts. Note the reddish eyes which are characteristic of the species.



Figure 4. Terminal portions of branches die following severe oviposition damage caused by the periodic cicada.





Figure 5. The egg laying habits of the periodic cicada cause serious damage to branch tips causing breakage and wilt.



Figure 6. Aerial view of hardwood damage caused by the periodic cicada.



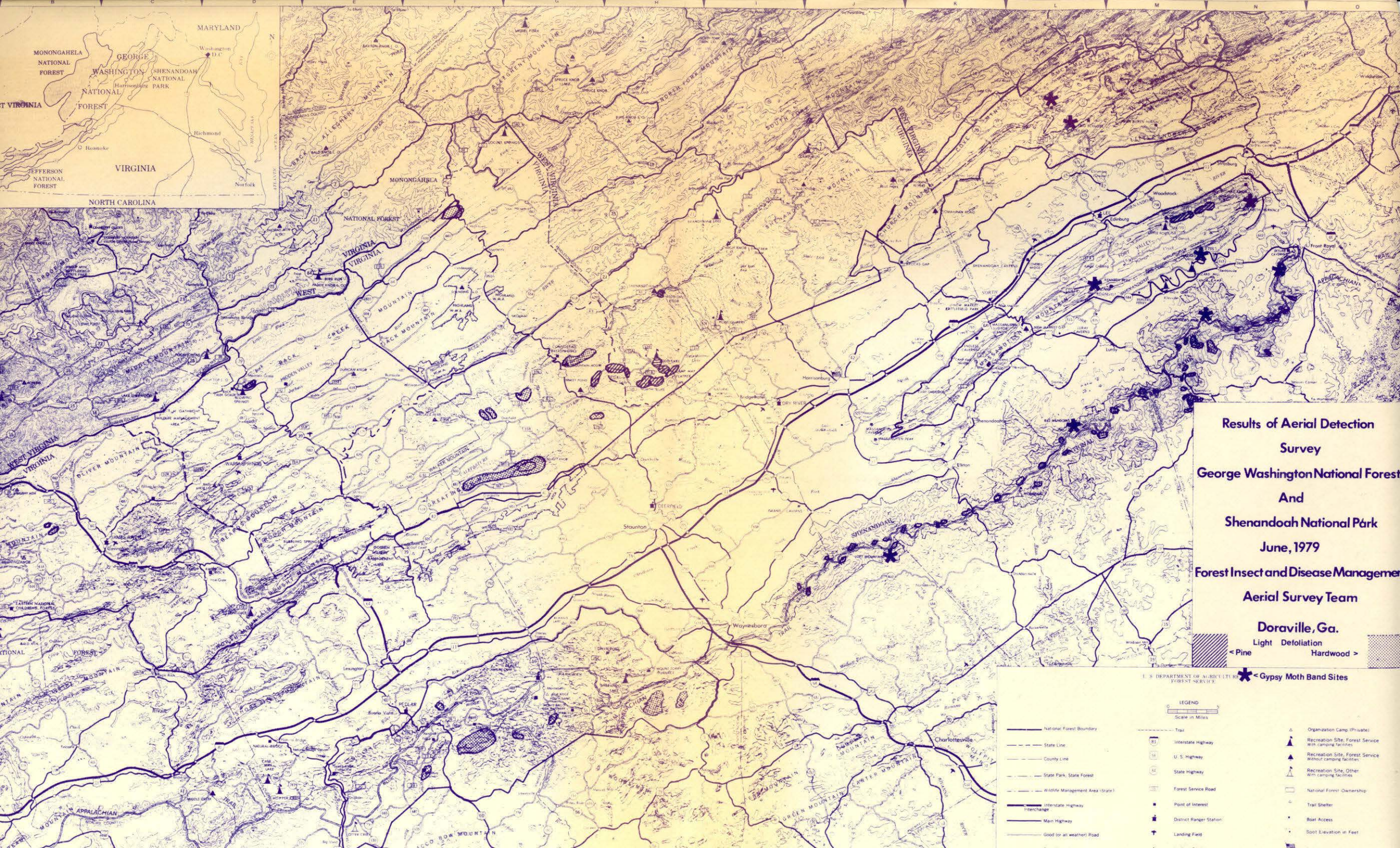


Figure 7. Pine defoliation caused by the Virginia pine sawfly.



Figure 8. Cocoons of the Virginia Pine sawfly were found in the soil under defoliated pine stands.





**Results of Aerial Detection  
Survey  
George Washington National Forest  
And  
Shenandoah National Park  
June, 1979  
Forest Insect and Disease Management  
Aerial Survey Team**

**Doraville, Ga.**

Light Defoliation  
< Pine Hardwood >

**\* Gypsy Moth Band Sites**

LEGEND  
Scale in Miles

- |                                      |                           |  |
|--------------------------------------|---------------------------|--|
| — National Forest Boundary           | — Trail                   | △ Organization Camp (Private)                                |
| — State Line                         | 81 Interstate Highway     | ▲ Recreation Site, Forest Service With camping facilities    |
| --- County Line                      | 16 U. S. Highway          | ▲ Recreation Site, Forest Service Without camping facilities |
| --- State Park, State Forest         | 62 State Highway          | ▲ Recreation Site, Other With camping facilities             |
| --- Wildlife Management Area (State) | Forest Service Road       | □ National Forest Ownership                                  |
| — Interstate highway Interchange     | Point of Interest         | ○ Trail Shelter  |
| — Main Highway                       | ■ District Ranger Station | • Boat Access  |
| — Good (or all weather) Road         | ↑ Landing Field           | • Spot Elevation in Feet                                     |